1.3 FLUORESCENCE YIELDS FOR *K* AND *L* SHELLS

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Fluorescence yields for the *K* and *L* shells for the elements $5 \leq Z \leq 110$ are plotted in Fig. 1-2; the data are based on Ref. 1. These yields represent the probability of a core hole in the *K* or *L* shells being filled by a radiative process, in competition with nonradiative processes. Auger processes are the only nonradiative processes competing with fluorescence for the *K* shell and

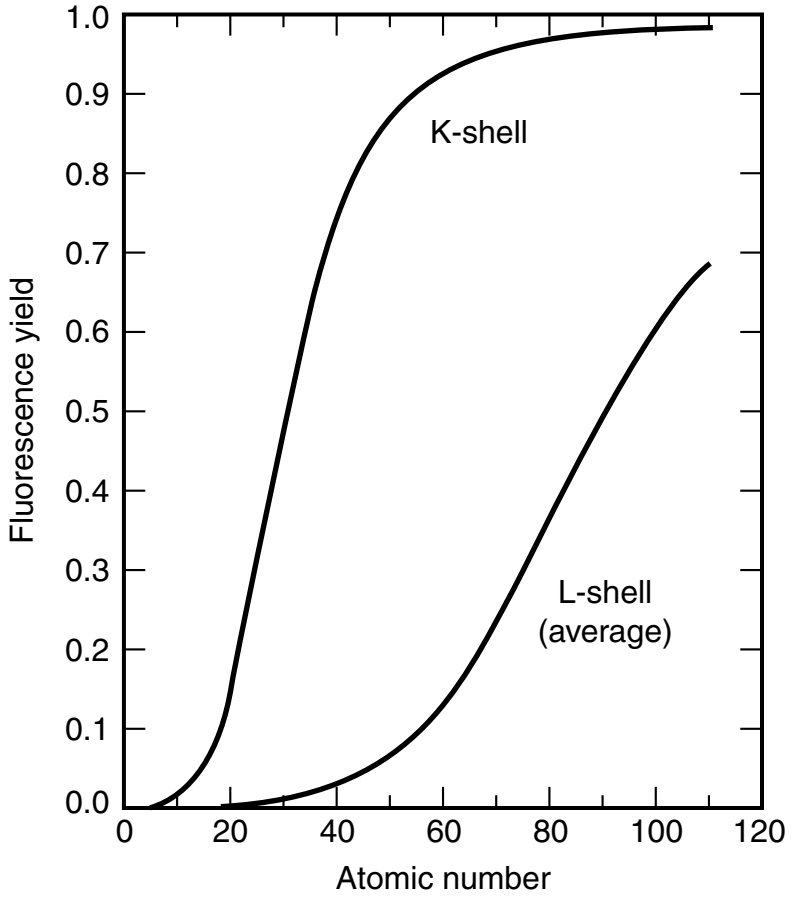

Fig. 1-2. *Fluorescence yields for K and L shells for $5 \leq Z \leq 110$. The plotted curve for the L shell represents an average of L_1, L_2, and L_3 effective yields.*

L_3 subshell holes. Auger and Coster-Kronig nonradiative processes complete with fluorescence to fill L_1 and L_2 subshell holes. Only one curve is presented for the three L subshells, representing the average of the L_1, L_2, and L_3 effective fluorescence yields in Ref. 1, which differ by less than about 10% over most of the periodic table. See Ref. 1 for more detail on the L subshell rates and the nonradiative rates, and for an appendix containing citations to the theoretical and experimental work upon which Fig. 1-2 is based. Widths of K and L fluorescence lines can be found in Ref. 2.

REFERENCES

1. M. O. Krause, "Atomic Radiative and Radiationless Yields for K and L Shells," *J. Phys. Chem. Ref. Data* **8**, 307 (1979).
2. M. O. Krause and J. H. Oliver, "Natural Widths of Atomic K and L Levels, $K\alpha$ X-Ray Lines and Several KLL Auger Lines," *J. Phys. Chem. Ref. Data* **8**, 329 (1979).